

SECNAV ENERGY ASHORE GOALS AND NAVFAC HI ENERGY INITIATIVES

**DON – USDA ENERGY MEETINGS
6-8 April 2010**

ENERGY BACKDROP

EXPLOSION OF FEDERAL ENERGY MANDATES (5 in last 3 years)

	EPAct 2005	E.O. 13423 (1/24/2007)	NDAA 2007	EISA 2007 (12/21/2007)	E.O. 13514 (10/5/2009)	SECNAV Energy Goals
Energy Conservation	Reduce 2%/yr from 2006 to 2015 (2003 baseline).	Reduce 3%/yr or 30% by 2015 (2003 baseline).		Reduce 30% by 2015 (codifies E.O.13423).	Reduce building energy intensity.	
Water Conservation		Reduce 2%/yr. from 2008 to 2015 (2007 baseline).			Extend E.O. 13423 requirement to 26% by 2020.	50% Net-zero facilities by 2020
Renewable Energy (RE)	Purchase RE 3% by 2012; 7.5% by 2013	At least 50% of EPAct goals are "new" RE sources placed into service after 1/1/99	Produce or procure at least 25% RE by FY2025.		Implement new RE generation projects.	By 2020, 50% of shore energy is alternative/RE
Greenhouse Gas (GHG) Emission Reduction					Establish GHG reduction targets (2008 baseline).	
Bldg Energy Audits/Assess.				Top 75% of energy using facilities must be audited (FY09-12)		
Metering	All facilities must be metered by 2012.			Metering Rqts & Assessments		
Transportation Fuel Rqts		E-85		E-85		Reduce veh. fuel 50% by 2015
Contract Awards						Factor in total energy costs

Secretary of the Navy, the Honorable Ray Mabus, Announces 5 NEW ENERGY GOALS – 14 Oct 2009



1. ACQUISITION PROCESS REFORM
2. SAIL THE GREAT GREEN FLEET
3. REDUCE VEHICLE NON-TACTICAL FUEL USE 50% by 2015
4. INCREASE ALTERNATIVE ENERGY ASHORE TO 50% BY 2020
5. INCREASE TOTAL ALTERNATIVE ENERGY USE TO 40% BY 2020

USDA – NAVY MOU SUPPORTS NAVY ENERGY GOALS

Jan 2010



MEMORANDUM OF UNDERSTANDING between the **DEPARTMENT OF AGRICULTURE** and the **DEPARTMENT OF THE NAVY**

I. Purpose and Basis for this Memorandum of Understanding

This Memorandum of Understanding (Agreement) formalizes a relationship between the United States Department of the Navy (DON) and the United States Department of Agriculture (USDA) (hereinafter collectively referred to as “the Parties”).

This Agreement establishes that the Parties agree to encourage maximum use of renewable energy, including outreach to other Federal, State, Local, and Tribal entities, as well as private entities, with the goal of providing technical assistance and financial products to these entities for the development of advanced biofuels and other renewable energy systems. The Federal Government, States, local governments, counties, utilities, private sector, non-governmental organizations, and other entities must all take steps to decrease nationwide energy use through the investment in and effective utilization of new, more efficient technologies, while also emphasizing the development of renewable energy projects.

SECNAV ENERGY GOAL #3

REDUCE VEHICLE PETROLEUM FUEL USE 50% by 2015



1. NFH Converted 1/3 of Fleet to E-85 Vehicles

- Challenge – Vehicle supply shortage due to demand. Usually get ½ of order.
- Challenge – No E-85 fuel or pumps yet available. *Now being resolved.*
 - DESC has lead on this issue
 - E-85 fuel stations currently being constructed at Marine Base and Navy Exchange.

2. NFH Exploring Electric Hybrids & Hydrogen Powered vehicles

- Aligns with DOE/State of Hawaii's Clean Energy Initiative
 - Challenge – Reasonably priced electric hybrids not readily available
- PACOM Partnership with Services and State to increase RE goals

3. USDA – DON BIO-FUEL initiatives may support vehicle fuels

4. DARPA Algae to Jet Fuel Project holds promise for both

- Transportation – Tactical and non-tactical
- Shore Power – Bio-fuel power plants



SECNAV ENERGY GOAL #4

INCREASE ALTERNATIVE ENERGY ASHORE TO 50% BY 2020

Renewable Energy (RE) & Sustainability

PV: ARRA – awarded.

- Joint PV – being advertised *

RE/Bio-Energy for PMRF– study

- Learned fm - Kauai RE Indus Forum
- Could support PMRF energy rqts

BIO-fuel Power Plant studies (EUL)

OTEC Pilot Plant – study underway

WAVE Energy Buoy - awarded

WIND

HYDROGEN

Leveraging 3rd Party Financing

*FEDBIZOPPS:

<https://www.fbo.gov/index?s=opportunity&mode=list&tab=list>

Energy Conservation 1ST Step

‘The best value renewable energy is the energy we don’t use.’

Projects – Leveraging Technology

- Multiple Ongoing Projects:
- Funding - Local, UESC, ESPC, PPA, EUL

Awareness – Change Behavior & Culture

- Top Support, Audits, Training, PR, Events

Efficiency - Influencing Operations

Leveraging Leadership:

- Carrot – ‘Right thing to do’
- Stick – ‘You will do it!’

Energy Security

•**Biofuel Power Plant - study**

- 3rd Party owned
- Black-start capability

•**PMRF Fuel Cell - awarded**

•**AMI Advanced Metering**

- PMRF awarded FY09
- Joint Base funding programmed for FY11

•**OSD Cyber-secure grid - study**

•**DOE FEMP EISA - Studies**

•**Defense Science Board - study**

•**ONR Pwr Mgt System – study**

‘Leveraging ‘Partnerships’

TRANSFORMATIONAL NAVY ENERGY PROGRAM



NAVY using '*Non-traditional*' approach to Energy:

WHY? - '*Unfunded Mandates*' – Not enough Navy \$ available.

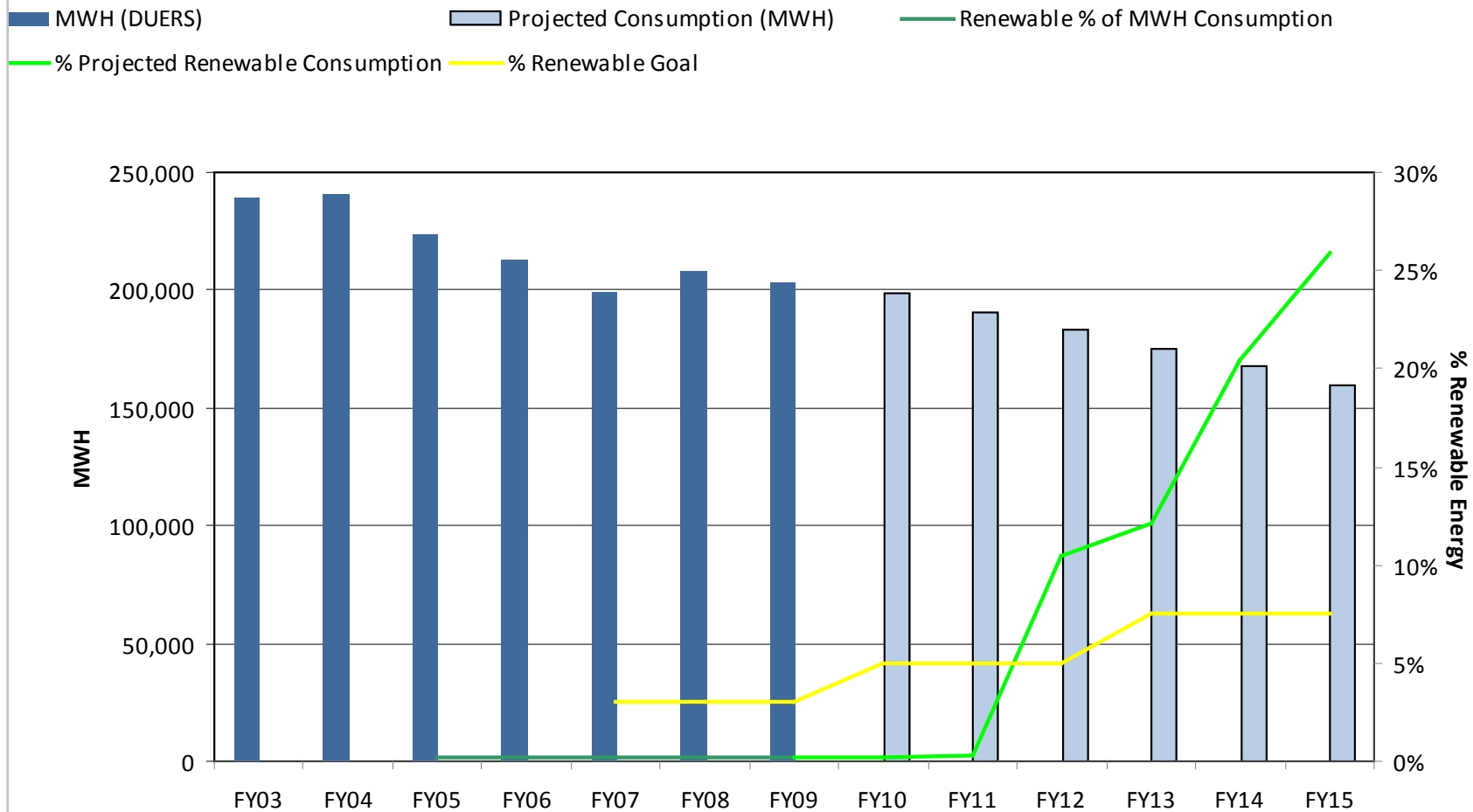
HOW?:

1. ***Leveraging Partnerships:*** USDA, DOE, State, County, Utility, Industry, PACOM , OSD
2. ***Leveraging 3rd Party Financing 'Vehicles':***
 - **PPA** - Power Purchase Agreements
 - **ESPC** - Energy Savings Performance Contracts
 - **UESC** - Utilities Energy Service Contracts
 - **EUL** - Enhanced Use Lease
 - **PPV** - Energy Public Private Venture
 - **other....**
3. ***Listening to Industry – Forums, GovEnergy Conference, TECHVAL***

RE Implementation PLAN



Navy Region Hawaii Renewable Energy



USDA Rural Energy for America Program (REAP) Can Support NAVY



What is the Rural Energy for America Program?

- The 2002 Farm Bill established the Renewable Energy Systems and Energy Efficiency Improvements Program under Title IX, Section 9006. The Food, Conservation, and Energy Act of 2008 reauthorized this program with modifications.
- REAP provides for LOAN GUARANTEES and/or GRANTS to farmers, ranchers and rural small businesses to purchase renewable energy systems and to make energy efficiency improvements.

Who is eligible?

- An agricultural producer (individual or entity) directly engaged in the production of agricultural products and obtains at least 50% or greater of their gross income from their agriculture business, OR
- A rural small business—an entity is considered a small business in accordance with SBA's (Small Business Administration) small business size standards (by NAICS codes).

GOOD NEWS!

**** USDA will support qualified NAVY Energy Contractors ****

TWO OCEAN ENERGY PROJECTS

1. OCEAN ENERGY THERMAL CONVERSION (OTEC)
2. WAVE ENERGY BUOY PROJECT



NAVFAC WAVE BUOY:

- 3rd Test Buoy generating 7 KW
- Located off Marine Corp Base Kaneohe



OTEC Key Component and System Design



Tasking: Provide system and key component designs for floating OTEC

Team: Lockheed-Martin + NAVFAC
HQ + NAVFAC ESC

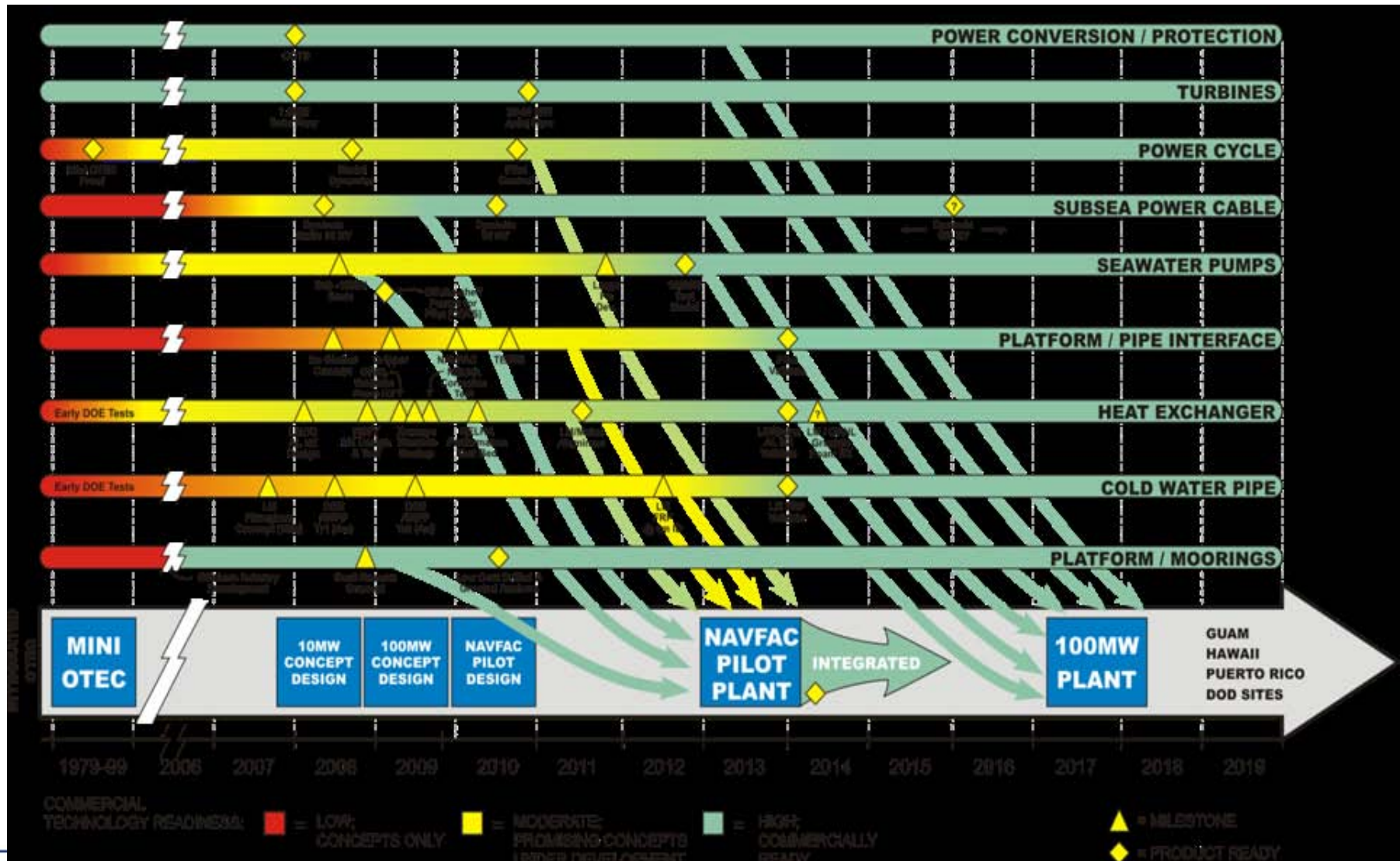
Funding: FY09 ARRA (\$8.5M)

Status & Schedule:

- ✓ Sources Sought: 20 Apr 2009
- ✓ Industry Day: 19 May 2009
- ✓ RFP: 24 Jun 2009
- ✓ Contract award: 21 Aug 2009
- OTEC Design report : Sep 2010
- TRL = 6



OTEC BUILDING BLOCKS



NAVY BIO-FUEL POWER PLANT
Could Support Hawaii Bio-fuel Economy



Multi-MW BIO-FUEL POWER PLANT AT PEARL
–Also at Marine Base and Army Base



FORD ISLAND PV RUNWAY



➤ INNOVATIVE:

- Historic Revitalization
- National Defense Mission
- 'Green' Energy Security
- Protected Appearance



➤ PARTNERSHIPS:

- Historic Partners
- State of Hawaii
- Utility
- Commercial Sector (PPA)



➤ BEING ADVERTISED NOW!

- RFP Posted 31 March
- Pre-proposal Conf 6-9 April

